

IN THE CLAIMS:

- 1 1-11. (Cancelled)
- 1 12. (New) A two-cycle combustion engine which comprises:
- 2 a combustion chamber;
- 3 a crank chamber accommodating a crankshaft;
- 4 a bearing provided on a side wall of the crank chamber for rotatably supporting
- 5 the crankshaft;
- 6 a first scavenging passage for supplying an air-fuel mixture to the combustion
- 7 chamber; and
- 8 a second scavenging passage for supplying a scavenge air to the combustion
- 9 chamber;
- 10 wherein one of the first and second scavenging passages communicates between
- 11 the combustion chamber and the crank chamber through the bearing for the crankshaft, and the
- 12 other of the first and second scavenging passages communicates directly between the combustion
- 13 chamber and the crank chamber.

1 13. (New) The two-cycle combustion engine as claimed in claim 12, wherein the first
2 scavenging passage communicates between the combustion chamber and the crank chamber
3 through the bearing for the crankshaft while the second scavenging passage communicates
4 directly between the combustion chamber and the crank chamber, and further comprising:

5 a suction chamber formed in a side face of a piston;

6 an air-fuel mixture passage for introducing an air-fuel mixture M into the suction
7 chamber; and

8 an air passage for introducing an air into the crank chamber;

9 wherein during an intake stroke of the engine, the air-fuel mixture from the air-
10 fuel mixture passage is introduced into the first scavenging passage through the suction chamber
11 and the air from the air passage is introduced into the crank chamber; and

12 wherein during a scavenging stroke of the engine, introduction of the air within
13 the crank chamber into the combustion chamber through the second scavenging passage takes
14 place before the air-fuel mixture within the first scavenging passage is introduced into the
15 combustion chamber.

1 14. (New) The two-cycle combustion engine as claimed in Claim 13, wherein the
2 piston has a lubricant passage formed therein for supplying the air-fuel mixture within the
3 suction chamber to a small end bearing disposed between a piston pin and a connecting rod.

1 15. (New) The two-cycle combustion engine as claimed in Claim 13, wherein the
2 second scavenging passage is positioned at a location closer to an exhaust port opening to the
3 combustion chamber for discharging an exhaust gas from the combustion chamber than the first
4 scavenging passage in a direction circumferentially of the combustion chamber.

1 16. (New) The two-cycle combustion engine as claimed in Claim 15, further
2 comprising a third scavenging passage for communicating directly between the combustion
3 chamber and the crank chamber;

4 the third scavenging passage being positioned at a location closer to the exhaust
5 port than the second scavenging passage in the direction circumferentially of the combustion
6 chamber; and

7 wherein during the scavenging stroke, introduction of the air within the crank
8 chamber into the combustion chamber through the second scavenging passage takes place before
9 an air-fuel mixture introducing timing, at which the air-fuel mixture within the first scavenging
10 passage is introduced into the combustion chamber, and, simultaneously with the air-fuel mixture
11 introducing timing or at a timing thereafter, introduction of the air within the crank chamber
12 through the third scavenging passage takes place.

1 17. (New) The two-cycle combustion engine as claimed in Claim 16, wherein an
2 opening of the second scavenging passage towards the crank chamber is closed by the piston
3 before the piston reaches a bottom dead center.

1 18. (New) The two-cycle combustion engine as claimed in Claim 12, wherein the
2 first scavenging passage communicates directly between the combustion chamber and the crank
3 chamber while the second scavenging passage communicates between the combustion chamber
4 and the crank chamber through the bearing for the crankshaft, and further comprising:

5 a suction chamber formed in a side face of a piston;

6 an air passage for introducing an air into the suction chamber; and

7 an air-fuel mixture passage for introducing an air-fuel mixture into the crank
8 chamber;

9 wherein during an intake stroke of the engine, the air from the air passage is
10 introduced into the second scavenging passage through the suction chamber and the air-fuel
11 mixture from the air-fuel mixture passage is introduced into the crank chamber; and

12 wherein during a scavenging stroke of the engine, introduction of the air within
13 the second scavenging passage into the combustion chamber takes place before the air-fuel
14 mixture within the crank chamber is introduced into the combustion chamber through the first
15 scavenging passage.

1 19. (New) The two-cycle combustion engine as claimed in Claim 18, further
2 comprising an air regulating valve for closing the air passage when a pressure inside the air
3 passage decreases to a value equal to or lower than a predetermined value.

1 20. (New) The two-cycle combustion engine as claimed in Claim 18, wherein an
2 opening of the first scavenging passage towards the crank chamber is closed by the piston before
3 the piston reaches a bottom dead center.

1 21. (New) The two-cycle as claimed in Claim 18, wherein the second scavenging
2 passage is positioned at a location closer to an exhaust port opening to the combustion chamber
3 for discharging an exhaust gas from the combustion chamber than the first scavenging passage in
4 a direction circumferentially of the combustion chamber.

1 22. (New) The two-cycle combustion engine as claimed in Claim 12, wherein the
2 first scavenging passage communicates directly between the combustion chamber and the crank
3 chamber while the second scavenging passage communicates between the combustion chamber
4 and the crank chamber through the bearing for the crankshaft, and further comprising:

5 an air passage for introducing an air into the second scavenging passage;

6 a reed valve disposed in the air passage; and

7 an air-fuel mixture passage for introducing an air-fuel mixture into the crank
8 chamber;

9 wherein during an intake stroke of the engine, the air from the air passage is
10 introduced into the second scavenging passage through the reed valve and the air-fuel mixture
11 from the air-fuel mixture passage is introduced into the crank chamber; and

12 wherein during a scavenging stroke of the engine, introduction of the air within
13 the second scavenging passage into the combustion chamber takes place before the air-fuel
14 mixture within the crank chamber is introduced into the combustion chamber through the first
15 scavenging passage.

1 23. (New) The two-cycle engine as claimed in Claim 22, wherein an opening of the
2 first scavenging passage towards the crank chamber is closed by the piston before the piston
3 reaches a bottom dead center.

1 24. (New) The two-cycle engine as claimed in Claim 22, wherein the second
2 scavenging passage is positioned at a location closer to an exhaust port opening to the
3 combustion chamber for discharging an exhaust gas from the combustion chamber than the first
4 scavenging passage in a direction circumferentially of the combustion chamber.

1 25. (New) The two-cycle combustion engine as claimed in Claim 12, wherein the
2 first scavenging passage communicates directly between the combustion chamber and the crank
3 chamber while the second scavenging passage communicates between the combustion chamber
4 and the crank chamber through the bearing for the crankshaft, and further comprising:

5 an air-fuel mixture passage for introducing an air-fuel mixture into the first
6 scavenging passage;

7 an air passage for introducing an air into the second scavenging passage;

8 a first reed valve disposed in the air-fuel mixture passage;

9 a second reed valve disposed in the air passage;

10 wherein during an intake stroke of the engine, the air-fuel mixture from the air-
11 fuel mixture passage is introduced into the first scavenging passage and the air from the air
12 passage is introduced into the second scavenging passage; and

13 wherein during a scavenging stroke of the engine, introduction of the air within
14 the second scavenging passage into the combustion chamber takes place before the air-fuel
15 mixture within the first scavenging passage is introduced into the combustion chamber.

1 26. (New) The two-cycle engine as claimed in Claim 25, wherein the second
2 scavenging passage is positioned at a location closer to an exhaust port opening to the
3 combustion chamber for discharging an exhaust gas from the combustion chamber than the first
4 scavenging passage in a direction circumferentially of the combustion chamber.

1 27. (New) A two-cycle combustion engine, which comprises:
2 a needle bearing for supporting a crankshaft within a crankcase;
3 first and second scavenging passages for communicating between a combustion
4 chamber and a crank chamber;
5 an air-fuel mixture passage for introducing an air-fuel mixture into the crank
6 chamber or the first scavenging passage during an intake stroke;
7 an air passage for introducing an air into the second scavenging passage or the
8 crank chamber during the intake stroke; and
9 a communicating hole for fluidly connecting the first or second scavenging
10 passage with the needle bearing;
11 wherein during a scavenging stroke of the engine, introduction of the air within
12 the second scavenging passage into the combustion chamber takes place prior to the air-fuel
13 mixture within the first scavenging passage being introduced into the combustion chamber; and
14 wherein an opening of a lower end of the second scavenging passage towards the
15 crank chamber is positioned at a location adjacent a region radially outwardly of the needle
16 bearing.

1 28. (New) The two-cycle combustion engine as claimed in Claim 27, wherein an
2 opening of a lower end of the first scavenging passage towards the crank chamber is positioned
3 at a location adjacent a region radially outwardly of the needle bearing.